

## Claims

1. A method of transmitting a digital signal, comprising:  
quantizing a source digital signal to generate at least a first and a second bit-stream  
each having a different quantization, wherein at least one bit-stream has been generated  
5 by an embedded quantization;  
transmitting at least one of the at least first and second bit-streams; and  
generating a dequantized digital signal from at least parts of one of the transmitted  
at least first and second bit streams;  
wherein if in the generation of the dequantized digital signal the parts of the at least  
10 first and second bit-streams are combined, the combined dequantized signal is generated  
by an embedded dequantizer having at least two quantization levels and having at least  
one quantization interval at each quantization level which is finer than quantization  
intervals for dequantizing any of the at least first and second bit-streams.
2. The method of Claim 1, wherein each quantization level has a quantization rate and  
15 at least one bit-stream generated by an embedded quantization is generated by an  
embedded quantization where at least two quantization intervals at a same lower  
quantization rate are split into a different number of quantization intervals at a same  
higher quantization rate.
3. The method of Claim 2, wherein at least one bit-stream generated by an embedded  
20 quantization is generated by a non-uniform embedded quantization.
4. The method of Claim 3, wherein at least one bit-stream generated by a non-uniform  
embedded quantization is generated by a non-uniform embedded dead zone quantization.
5. The method of Claim 4, wherein at least one bit-stream generated by a non-uniform  
embedded dead zone quantization is generated by a non-uniform embedded double dead  
25 zone quantization.
6. The method of Claim 1, wherein at least one bit-stream generated by an embedded  
quantization is generated by a uniform embedded quantization.
7. The method of Claim 6, wherein at least one bit-stream generated by a uniform  
embedded quantization is generated by a uniform embedded dead zone quantization.
- 30 8. The method of Claim 7, wherein at least one bit-stream generated by a uniform  
embedded dead zone quantization is generated by a uniform embedded double dead zone  
quantization.
9. The method of Claim 1, wherein each bit-stream is generated by an embedded

quantization.

10. The method of Claim 1, further comprising selecting end points of quantization intervals of a quantizer such that at least one of the end points does not coincide with end points of a quantization interval of another quantizer.

5 11. The method of Claim 1, wherein the embedded quantization comprises at least three levels, preferably more than seven levels, and still more preferred more than ten levels.

12. The method of Claim 1, wherein the quantizing of the source digital signal comprises an embedded successive approximation quantization at every quantization level.

10 13. The method of Claim 1, further comprising controlling redundancy for each quantization level.

14. A device for transmitting a digital signal, comprising:

quantizing means for quantizing a source digital signal to generate at least a first and a second bit-stream each having a different quantization, wherein at least one bit-stream has been generated by an embedded quantization; and

15 transmitting means for transmitting at least one of the at least first and second bit-streams, the quantizing means being such that when a dequantized digital signal is generated from at least parts of one of the transmitted at least first and second bit streams, if in the generation of the dequantized digital signal the parts of the at least first and second bit-streams are combined, the combined dequantized signal is generated by an embedded dequantizer having at least two quantization levels and having at least one quantization interval at each quantization level which is finer than quantization intervals for dequantizing any of the at least first and second bit-streams.

15. A device for receiving a digital signal, comprising:

25 receiving means for receiving at least a first and a second bit-stream; and

dequantizing means for generating a dequantized digital signal from the received first and second bit-streams, the dequantizing means comprising combining means for combining, in the generation of the dequantized digital signal, the at least first and second bit-streams, the combined dequantized signal being generated by an embedded dequantizer having at least two quantization levels and having at least one quantization interval at each quantization level which is finer than quantization intervals for dequantizing any of the at least first and second bit-streams.

30 16. Two or more signals generated by a method of transmitting a digital signal, wherein

the method comprises:

quantizing a source digital signal to generate at least a first and a second bit-stream each having a different quantization, wherein at least one bit-stream has been generated by an embedded quantization;

5 transmitting at least one of the at least first and second bit-streams; and

generating a dequantized digital signal from at least parts of one of the transmitted at least first and second bit streams;

wherein if in the generation of the dequantized digital signal the parts of the at least first and second bit-streams are combined, the combined dequantized signal is generated  
10 by an embedded dequantizer having at least two quantization levels and having at least one quantization interval at each quantization level which is finer than quantization intervals for dequantizing any of the at least first and second bit-streams.

17. The device of Claim 14, wherein the device is integrated in a node of a telecommunications network.

15 18. The device of Claim 15, wherein the device is integrated in a node of a telecommunications network.

19. The device of Claim 14, wherein the device is integrated in a telecommunications network.

20 20. The device of Claim 15, wherein the device is integrated in a telecommunications network.

21. A computer readable medium for storing executable codes, wherein the executable codes are configured to transmit a digital signal and wherein the medium comprises:

25 a code configured to quantize a source digital signal to generate at least a first and a second bit-stream each having a different quantization, wherein at least one bit-stream has been generated by an embedded quantization;

a code configured to transmit at least one of the at least first and second bit-streams; and

a code configured to generate a dequantized digital signal from at least parts of one of the transmitted at least first and second bit streams,

30 wherein if in the generation of the dequantized digital signal the parts of the at least first and second bit-streams are combined, the combined dequantized signal is generated by an embedded dequantizer having at least two quantization levels and having at least one quantization interval at each quantization level which is finer than quantization

intervals for dequantizing any of the at least first and second bit-streams.

22. A method of receiving a digital signal, comprising:

receiving at least a first and a second bit-stream; and

5 generating a dequantized digital signal from the received first and second bit-streams, the dequantizing means comprising combining means for combining, in the generation of the dequantized digital signal, the at least first and second bit-streams, the combined dequantized signal being generated by an embedded dequantizer having at least two quantization levels and having at least one quantization interval at each quantization level which is finer than quantization intervals for dequantizing any of the at least first  
10 and second bit-streams.